

SUMMARY OF THE NRC/DOE SITE VISIT ON
PROGRESS ON QUATERNARY FAULT STUDIES, EXPLORATORY STUDIES
FACILITY MAPPING, AND SEISMIC INITIATIVE

YUCCA MOUNTAIN SITE, MAY 25-26, 1993

On May 25 and 26, 1993, representatives of the Nuclear Regulatory Commission, U.S. Department of Energy (DOE), State of Nevada Nuclear Waste Project Office, and Clark County, NV attended a site visit to the Yucca Mountain candidate repository site to view and discuss DOE's site characterization progress on Quaternary fault studies, exploratory studies facility mapping, and studies of recent earthquakes in the Yucca Mountain area. DOE participants included principal investigators from the U.S. Geological Survey, U.S. Bureau of Reclamation, Geomatrix, and Sandia National Laboratories. An attendance list is included as Attachment 1 and the site visit agenda is Attachment 2.

The purpose of the visit was for DOE Yucca Mountain Project (YMP) Principal Investigators to provide NRC technical staff with a status of the progress of studies related to the assessment of Quaternary faulting at and near the Yucca Mountain candidate high-level waste repository. An assessment of Quaternary faulting is required by 10 CFR 60.122 (c)(11) to determine if the potentially adverse condition of faulting during the Quaternary Period is present at a repository site.

The first stop of the site visit was the Yucca Mountain Field Operations Center (FOC) where participants were provided an overview of the status of Quaternary fault investigations, including 1) studies being conducted to assess Quaternary faulting in Midway Valley at the prospective site of repository surface facilities, and 2) ongoing study and mapping of the Ghost Dance fault zone. Attendees were also briefed on the status of the exploratory studies facility (ESF) construction, geotechnical investigations supporting the ramp design, ESF testing coordination, ESF mapping, and strategy for generic fault zone testing planned for the ESF area. Discussions also included a brief overview of information related to recent earthquake activity near Yucca Mountain.

Following required safety training for those persons planning to enter the ESF construction area and starter tunnel, site visit participants departed the FOC to visit exposures of the Paintbrush Canyon fault in the sand ramps on the western side of Busted Butte and hear preliminary observations from investigators. After discussions of evidence for faulting at Busted Butte, participants traveled to the ESF north portal construction site where they were provided with a discussion of the status of construction and geologic mapping activities. Participants also entered the excavated portion of the north portal to examine faults and fractures mapped by principal investigators and to view the manner in which ESF ramp mapping is carried out.

On the second day of the site visit participants visited trenches across faults located on the west side of Yucca Mountain in Crater Flat. Five trenches were visited, including two across the Solitario Canyon fault, two

across the Stagecoach Road fault, and one newly deepened and widened excavation along the Bare Mountain fault. Due to time constraints, trench CF-1 across the Fatigue Wash fault was not visited. At each of the Solitario Canyon and Stagecoach Road fault trenches site visit participants heard discussions by YMP principal investigators and were shown evidence to support preliminary conclusions on the degree and age of faulting based on the deposits exposed and preliminary trench all maps. Although work had not been initiated at the Bare Mountain excavation, participants representing DOE, NRC, and the State of Nevada discussed interpretations of the exposure and evidence for recent faulting in light of previous interpretations of movement along the Bare Mountain fault.

The site visit provided participants with an update of activities necessary for the assessment of Quaternary faulting at the Yucca Mountain site. Based on lessons learned at this interaction, more time for technical presentations and questions at the FOC may be desirable for future visits.

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MAY 25 AND 26, 1993
for
U.S. NUCLEAR REGULATORY COMMISSION STAFF

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